CLAIMS

1. Microfluidic connection, comprising
a carrier element (3) comprising a microfluidic channel (31) fixed between a feeding element (1) and a backplate (2), the feeding element (1) comprising a channel (16) adopted for feeding a fluid into the microfluidic channel (31);

2. The microfluidic connection of claim 1 or any one of the above claims, wherein the channel (16) of the feeding element is structured as a macrofluidic channel.

3. The microfluidic connection of claim 1 or any one of the above claims, wherein the channel (16) of the feeding element is structured as a microfluidic channel.

4. The microfluidic connection of claim 1 or any one of the above claims, wherein the microfluidic channel (31) of the carrier element (3) is arranged between a first layer (32) and a second layer (33) of the carrier element (3).

5. The microfluidic connection of claim 4 or any one of the above claims, wherein at least one of the first and second layer (32, 33) of the carrier element (3) is structured to form a microfluidic channel (31).

6. The microfluidic connection of claim 1 or any one of the above claims, wherein the carrier element (3) comprises an opening (35) on a first side adopted for feeding a fluid from the feeding element (1) into the microfluidic channel (31).

7. The microfluidic connection of claim 1 or any one of the above claims, wherein the opening (35) is arranged below the feeding element (1).

8. The microfluidic connection of claim 6 or any one of the above claims, wherein the feeding element (1) comprises a tube (11) having a macrofluidic channel (16) and a channel head, the channel head arranged over the opening (35) of the first layer (32).

9. The microfluidic connection of claim 6 or any one of the above claims, wherein the diameter of the channel head comprises approximately the same value as the diameter of the opening (35) of the first layer (32).

10. The microfluidic connection of claim 7 or any one of the above claims, wherein the backplate (2) is arranged on a second side of the carrier element (3) at least partly opposing the feeding element (1).

11. The microfluidic connection of claim 1 or any one of the above claims, further comprising a clamping element (4) for pressing feeding element (1) and backplate (2) tightly together.

12. The microfluidic connection of claim 1 or any one of the above claims, wherein the backplate (2) comprises a screw connection (24) to the feeding element for pressing feeding element and backplate together.

13. The microfluidic connection of claim 1 or any one of the above claims, wherein the backplate (2) comprises a bore with internal thread (24) arranged below a bore hole (14) of the feeding element (1) the bores (14, 24) adopted for holding screws (15).

14. The microfluidic connection of claim 12 or any one of the above claims, wherein the carrier element (3) comprises a bore hole (34) for the screw connection (24) of the backplate (2).

15. The microfluidic connection of claim 1 or any one of the above claims, wherein the backplate (2) comprises a recess (25), the recess (25) arranged opposing the feeding element (1).

16. The microfluidic connection of claim 1 or any one of the above claims, wherein the recess (25) is arranged opposing the opening (35) in the carrier element (3).

17. The microfluidic connection of claim 1 or any one of the above claims, wherein the recess (25) comprises an elastic thrust piece (26).

18. The microfluidic connection of claim 1 or any one of the above claims, wherein the elastic thrust piece (26) comprises at least teflon or polyurethane or PEEK or a material with a resiliency property.

19. The microfluidic connection of claim 1 or any one of the above claims, wherein the elastic thrust piece (26) comprises a spring loaded thrust piece arranged in the recess (25).

20. The microfluidic connection of claim 1 or any one of the above claims, wherein a volume of the elastic thrust piece volume (26) comprises at least the value of a volume of the recess (25).

21. The microfluidic connection of claim 1 or any one of the above claims, wherein the backplate (2) comprises steel or tantalum or titan or PEEK.

22. The microfluidic connection of claim 1 or any one of the above claims, wherein the feeding element (1) comprises steel or tantalum or titan or PEEK.

23. The microfluidic connection of claim 1 or any one of the above claims, wherein the carrier element (3) comprises polyimide or PEEK.

24. The microfluidic connection of claim 1 or any one of the above claims, wherein a thickness of the carrier element (3) is in the range of 100 µm to 1000µm.

25. The microfluidic connection of claim 1 or any one of the above claims, wherein a thickness of the carrier element (3) is approximately 300 µm.

26. The microfluidic connection of claim 1 or any one of the above claims, wherein a thickness of the microfluidic channel is in the range of 10µm to 100µm.

27. The microfluidic connection of claim 1 or any one of the above claims, wherein a thickness of the microfluidic channel (31) is approximately 50µm.

28. The microfluidic connection of claim 1 or any one of the above claims,

wherein the carrier element (3) comprises at least three different layers structured to form at least two separated microfluidic channel.

29. The microfluidic connection of claim 6 or any one of the above claims, wherein the opening (35) of the carrier element (3) comprises a radius of smaller than 500 µm.

30. The microfluidic connection of claim 6 or any one of the above claims, wherein the opening (35) of the carrier element (3) comprises a diameter in the range of 50µm to 200µm.

31. The microfluidic connection of claim 1 or any one of the above claims, wherein the microfluidic connection is adopted for withstanding fluid feeding pressures up to 400000 hPa (400bar).

32. The microfluidic connection of claim 1 or any one of the above claims, wherein the feeding element comprises an outlet area (18) arranged next to the macrofluidic channel (16).

33. The microfluidic connection of claim 1 or any one of the above claims, wherein the carrier element (3) comprises a second channel (40) connected to an outlet area and separated from the microfluidic channel by a valve (98).

34. The microfluidic connection of claim 33 or any one of the above claims, wherein the second channel (40) of the carrier element is connected by an opening (39) to a second macrofluidic channel (40) of the feeding element (1).

35. The microfluidic connection of claim 33 or any one of the above claims, wherein the valve (98) is adopted for automatically opening at high pressures, thus providing protection to the subsequent fluidic components.